GRUMMAN
planenews

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Reborn C-2A Greyhound debuts

Grumman unveiled the first reprocured C-2A Greyhound production aircraft at a special roll-out ceremony held on Wednesday, January 16, in Bethpage. The airplane, designed as a carrier on-board delivery system (COD), was built by Grumman under the U.S. Navy's first ever multiyear aircraft contract.

On hand to accept ownership of the aircraft was Vice Admiral James B. Busey, Commander of the Naval Air Systems Command. The admiral told the roll-out audience that "the fleet is ready and waiting for this bird and her 38 sister aircraft. The C-2A Greyhound is vital to the success of the carrier battle crew — providing the logistics link for the total carrier maximum capability."

Noting the hulking size and bulky lines of the Greyhound, Admiral Busey said that "While the Greyhound may not be very sleek looking and carries no reputation of battles fought and won, it is, however, the prettiest sight that you have ever seen coming in for a landing when you are a thousand miles out at sea aboard an aircraft carrier low on spare parts and supplies and without mail for many weeks."

Reborn Greyhound

Designated "aircraft number 20," this C-2A follows 19 earlier C-2A Greyhounds built for the Navy by Grumman from 1965 to 1968. Grumman will deliver 39 C-2As to the Navy between 1985 and 1989 under a $678 million multiyear contract signed in early 1983.

(Continued on page 3)

Lifeline. *The reprocured C-2A Greyound was unveiled in a special rollout ceremony Wednesday, January 16. At the podium, right, is Vice Admiral James Busey, Commander of Naval Air Systems Command, flanked by Grumman Corporation President Joe Gavin and Aerospace President George Skurla. Vice Adm. Busey called the Greyhound a vital link between the carrier fleet at sea and the shore. He also said the multi-year purchase concept may save the U.S. as much as $100 million in comparison with the standard purchase methods. More on page 3.*

New study explores gear required for future 'space walks' -pg. 4

Houston wins contract to build shelters for Air Force computers -pg. 5

How to draw from your FSA . . . and file a medical claim in '85

Your son's dentist is already sending his bills for 1985. You dropped the Grumman turkey on your foot and required x-rays on Super Bowl weekend. Your wife has the flu. The eye doctor says junior needs a new pair of specs.

You're protected, because you are covered under the Grumman/Travelers Insurance Plan and you've elected to set up a flexible spending account for your family's health care in 1985. Okay, you've paid off the bills, how do you draw on your 1985 flexible spending account?

Flexible spending account

Here's a step-by-step rundown:

- Rule no. 1 is save all your original bills. No copies will be accepted by Travelers. Claims should always be sent first for reimbursement under all available insurance coverages.
- After you have submitted your claim form and original bills to Travelers, you may draw on your flexible spending account for any unreimbursed out-of-pocket expenses.
- Pick up a FSA claim form at your local Employee Services (ES) office or at the Insurance office in Grumman Headquarters. This is a special claim form that is used to submit claims to Travelers under the FSA program.
- Attach your Explanation of Benefits (EOB) which you received from Travelers to the FSA form and you will be reimbursed for the expenses not covered by the carrier. For example, the $250 deductible, any co-insurance, etc.
- If you have a claim which is not covered by your health carrier, a paid itemized bill and the FSA claim form is all you need for reimbursement.
- How often can you request reimbursement of your FSA? Travelers will only reimburse claims in excess of $100 and only once a month. You should try to "batch" your bills and submit reimburseable amounts. Of course, at year end, any amount will be paid to avoid forfeiture of your remaining FSA money.
- Under the FSA program, you can not submit an unpaid bill to Travelers and have them pay for the services directly. Unlike the insurance contract, the FSA arrangement is only permitted to reimburse paid bills.
- You should mail your FSA claim form to: The Travelers Insurance Company, 229 7th Street, Garden City, N.Y. 11530. Or you can mail your FSA claim form to the Grumman Insurance Office, C14-40, by using a special interoffice claims envelope (available at all ES offices).

Grumman/Travelers in '85

Due to the rising costs of health care, the Grumman/Travelers medical program's per person deductible has been raised in 1985. It is now $250 (all-cause) per person. It is $500 per family after two family members have each hit the $250 mark.

How do you submit a claim? The first time you submit a claim to Travelers you must complete a "First Notice of Claim" form (blue insurance form). These are available at all ES offices and in the Insurance office in GHQ. Complete the employee section. Have your doctor complete the physician's section or you can just attach the doctor's *original* itemized bill advising the dates of treatment and diagnosis.

There are two changes in the claim filing process for 1985:

- Your social security number is now the key identifying number for claims and must be included on all claims. (It used to be your Grumman permanent number.)
- In the case of certain surgical procedures when performed on a non-emergency basis, an additional form — a second surgical opinion form — must be included. (See sidebar on this page).

Remember that you do not need a new claim form for each diagnosis. Travelers generally requires one claim form every six months. Subsequent claims should be submitted without a form as long as:

- It is an original itemized bill with the name of the employee and the employee's social security number.
- It states the name of the dependent patient (if any).
- The name "Grumman" is put on the bill.
- You include the date and description of services rendered and diagnosis for the condition.
- Keep in mind that cash register receipts, cancelled checks, and statements of balance due are not eligible as proof of medical expense.

You should generally submit claims as the expense is incurred. However, if you incur a number of small bills which would not satisfy the major medical deductible ($250) you should accumulate them until benefits are anticipated. Claims must be filed within one year from dates of service.

As in the past, your bills do not have to be paid before you file a claim. If you prefer, you can authorize benefits to be paid directly to the physician. Remember you must reach the $250 deductible before you authorize payments to your physician.

Claims take about four to six weeks to process.

If you have any questions about your FSA or medical insurance coverage in 1985, call Insurance, Ext. 53146.

New assignments

The following Grummanites recently received new assignments:

ENGINEERING: Thomas Fry, Power Plant Design group leader, for GIV, Nacelles/Thrust Reversers, S2T and the Composite Wing and Vertical Tail, Pl. 9; Allan Dantowitz, specialist, Statistics, Modeling and Simulation Analysis, Pl. 5; Anthony Coretti, specialist, System Safety, Pl. 1; George Biscoe, project leader, F-14 Weapons/Defensive Subsystems, Pl. 1; Daniel Crowley, group head, System Integration, Pl. 35; John George, project leader, F-14 Software Requirements Analysis and Design, Pl 1; Dennis Berde, engineering specialist, Control Circuits Design, Pl 14; Charles Draghi, section head, Radio Frequency Design, Pl 35; David Durst, electrical specialist, Electrical Systems, Pl 5; and Louis Fabiano, principal engineer, Software Environments, Pl 35.

BETHPAGE/CALVERTON OPERATIONS: W. Rasmussen, GAC L. I. Airport Operations Manager, Pl. 7; C. Cagomiros. Bethpage Deputy Airport Manager, Plant

F-14 PROGRAM MANAGEMENT: R. Carlo, program manager, Modification Programs; and C. Mollica, program manager, Weapons Programs.

Professionally speaking

On January 1, Grumman Corporation President Joe Gavin began serving a one-year term on the Aerospace Industries Association of America's (AIAA) Board of Governors. AIAA is a trade association representing the nation's major manufacturers of commercial, military and business aircraft, helicopters, aircraft engines, missiles, spacecraft, and related components and equipment.

Bruno Caputo, vice president and general manager of Great River Operations, recently became an honorary member of the Delta Mu Delta, the National Honor Society in Business Administration, at Dowling College.

Second surgical opinions

If your doctor recommends surgery — and it is not an emergency, what should you do?

If you require such surgery, call Travelers in Garden City (Telephone Number - 516-294-5573). They will provide the names/addresses of three or four Board-Certified Surgeons in your area. (A complete list of surgeries requiring second opinions can be found on the new surgical second opinion form).

Make an appointment for a second opinion. After the examination, the doctor will advise on whether or not surgery is necessary. Please note that the second surgeon can not perform the operation.

A second surgical opinion form must be completed and can be obtained from the Grumman Insurance Dept. in GHQ.

Make your own decision based on the two doctors' evaluations. The surgeon's fee will be paid according to the Grumman/Travelers contract (80 percent of reasonable and customary in full, balance to major medical).

If you neglect to have a second opinion for a procedure listed, Travelers will only reimburse the surgeon's fee at 50 percent of the reasonable and customary charge, with no major medical coverage.

If you still can't decide whether to have surgery after getting the second opinion, you may go to a third doctor. This third opinion will also be covered in full.

If you have questions about this new feature, call Insurance, Ext. 53146.

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Busey on C-2A Greyhound: 'prettiest sight you've ever seen'

(Continued from page 1)

Aircraft number-20 will be used by Grumman for carrier suitability and flight dynamic tests. The second in the new series will be used to check avionics integration and electromagnetic compatibility. Testing is scheduled to be completed in September 1985. The first C-2As will support the Mediterranean fleet from bases in Sigonella, Italy. Later C-2As will be based at the Cubi Point U.S. Naval Air Station in the Philippines.

"The long range, high volume, and logistics capability offered by the Greyhound is essential to the readiness and sustainability of our deployed carrier battle forces," stated Busey. "Each of these aircraft brings to the carrier the equivalent of several additional first-line fighting aircraft through the timely re-supply of parts and personnel — and that's a job that only the Greyhound can do. It is a proven aircraft with a record of more than 15 years of dedicated service thanks to the dedicated efforts of the hardworking professionals at Grumman and its associates," he continued.

The new 'updated' version of the C-2A Greyhound is exceptionally well suited to meeting the current requirements for a cargo aircraft to transport supplies and personnel to aircraft carrier battle groups. The twin-turboprop aircraft has the largest payload capacity of any carrier on-board delivery airplane and as such is capable of handling the Navy's requirements through the '80s and well into the '90s. "In all probability the carrier battle crews and naval aircraft of the 21st century will also be supported by the C-2A Greyhound," asserted Busey.

The reprocured C-2A includes significant improvements including: new engines; updated avionics; an advanced navigation and communication system; anticorrosion alloys and new polyurethane finishes; greater passenger comfort; a greater load bearing cargo winch; an expandable cargo cage; and a more reliable, more powerful auxiliary power unit.

Busey also pointed out that after a tough battle getting the program through Congress, the multiyear contract concept has proved to be a "remarkably effective economic method of filling a specific need within tight budget and time constraints.

"As the first multiyear contract agreement for the Navy this program received far more than its share of Congressional attention. The multiyear reprocurement program has stood the test and now represents a savings to the Navy budget and we taxpayers over the next five years of hopefully in excess of $100 million dollars. It was a tough battle but one that we won as a team and it's great to accept the first fruits of our labors here today," he asserted.

The C-2A reprocurement is the first major multiyear aircraft purchase agreement that the Navy has ever been involved in. Most aircraft contracts are renewed on a year-to-year basis and are often subject to inflationary price increases as material, labor and other production expenses rise. The multiyear concept is free of such problems. With a long-term fixed contract for a set amount of aircraft of a stable design configuration, Grumman can order and purchase parts and materials and manufacture at current prices thereby avoiding future increases while taking advantage of substantial bulk price discounts.

Keeping the faith

Saying he was particularly proud of the achievements of the Grumman personnel involved in the production of the reprocured C-2A Greyhound, Busey commented that "We are teammates on many Navy programs, just like the C-2, the E-2, the A-6, the EA-6, the F-14, the A-6E Upgrade program, and the F-14D program, and you here at Grumman can be most proud of your products — they are the best. Keep your standards of quality up. We in the Navy continue to need your best efforts. We are investing in excess of $3-billion per year, each year, this fiscal year and fiscal year '86 in Grumman airplanes. This represents 40 percent of our Navy fixed-wing aircraft budget. That kind of commitment to your products should certainly indicate to you our faith in and need for your products. Keep those lines rolling."

Grumman Aerospace President George Skurla noted that while the Greyhound "may not be any beauty contest winner — it still deserves special recognition for its impressive capabilities and history of service. The C-2A has been and will continue to be the prime logistic link between our Navy's carrier fleet and the shore. Fleet combat planes would soon become inoperative without the C-2A's fast, reliable, round-the-clock ability to deliver urgently needed spare parts and supplies."

Skurla said that the roll-out of C-2A aircraft number-20 represented "the second coming and resurrection of an aircraft whose initial production was terminated nearly two decades ago but whose outstanding operational capabilities since that time have made it increasingly more valuable in support of our carriers all around the world.

"The improvements incorporated in the latest version of the Greyhound, including a 10,000-pound payload carrying ability, will significantly increase the aircraft's already considerable capabilities and its usefulness to the Navy carrier fleet," he stressed.

Grumman Corporation President Joseph G. Gavin pointed out that the multiyear funding concept of the C-2A program will lower the cost of the airplane by approximately $100 million over conventional yearly funding. "We are proud of our performance on the Navy's first major multiyear purchase agreement and grateful for the cooperation and dedication Grumman received from our suppliers and subcontractors in this program.

"What we have here in the form of the C-2A Greyhound is a strictly utilitarian aircraft designed and manufactured to provide economical and vital service to the Navy. The true art of aeronautical engineering is said to be the ability to design an aircraft to perform its mission as well as practical. The successful rebirth of the C-2A confirms that it fits that description and its mission perfectly," he stated.

Gavin said that the encouraging results thus far in the multiyear reprocurement program should hopefully lead to Grumman and the Navy becoming involved in more contracts in the future. Noting that as part of a continuing cost-containment consciousness, Grumman is dedicated to "sharpening our competitive position in the future."

Harvey Fromer, C-2A Program Vice President, stated that "42 months ago we initiated an effort to develop the reprocured C-2A program within a multiyear purchase concept. What we have accomplished since represents a Grumman commitment to meet delivery requirements as quickly and cheaply as possible. At the outset of the program we had a projected savings of approximately $58 million over a standard aircraft purchase contract. Currently we are looking at a savings of over $100 million.

"This success can be directly attributed to dedication and teamwork — the dedication and teamwork of Grumman, our suppliers and subcontractors, and the Navy," said Fromer. "The task before us now is to marshal all our energies for full production of the reprocured Greyhound with the requisite quality control and cost containment so that we can have continued success in the program's future."

Room to spare. *Vice Adm. James Busey (L) and GAC President George Skurla (R) inspect the C-2A Greyhound's spacious interior during the roll-out ceremony for the reprocured aircraft held in a Bethpage Plant 4 hangar.*

Getting the right stuff for 'space walks'

Grumman's business is usually quite remote to that of the garment industry. But through an interesting study contract it recently won, it could play a role in setting future trends in. . .spacesuits.

The contract actually covers a lot more than spacesuit design, but that's part of it. It's officially called the Advanced EVA System Design Requirements Study — EVA is an acronym for Extra-Vehicular Activity. Grumman's contract is one of three — identical contracts were awarded to McDonnell Douglas and Boeing. It is thrqugh NASA's Johnson Space Center in Houston, totals $700,000, and has a year's duration.

"The objective of this study program is to formulate the requirements for an advanced EVA system," says Fred Abeles, program manager. "This will allow the EVA to perform to the specifications of the Manned Space Station.

'Straw-man'

"We call this a 'straw-man specification,' " Abeles continues. "It's a first stab at a design of a system." Abeles notes that NASA awarded contracts to three companies in order to generate several unique approaches, thereby giving the government more alternatives to choose from.

The EVA system of the future would consist of a spacesuit and gloves as well as more advanced items. These might include the manipulator foot restraint, a model of which was built by Grumman; a power pack enabling untethered mobility, akin to the present manned maneuvering unit; specially designed advanced tools; some form of portable computer; and a workstation to store the tools and provide a work surface.

In the long run, the study will contribute to the design of the planned Manned Space Station, since NASA's rough plans for the Station include numerous EVA missions.

"The tasks to be performed by the Manned Space Station will require a lot of EVA — as much as 2,000 hours a year have been proposed," says Abeles. "With current EVA equipment, it cannot be done with the duration and frequency we foresee to be required."

Latest fashion. *Systems for extra-vehicular activity — the proper name for walking in space — are the subject of a new GAC study contract. Above is a demonstration of a future 'hard' spacesuit.*

Abeles says this is due to three factors. For one, current equipment utilizes an unacceptably large volume of consumables — lithium hydroxide for carbon dioxide removal, water for cooling, and oxygen. NASA's present EVA system consumes roughly four pounds of materials an hour. Since the Space Station is to be resupplied every 90 days, that would mean storing a considerable amount of materials.

In addition to finding ways to reduce consumption levels, the study will assess ways of regenerating these materials aboard the Space Station.

There are also limitations in the design of the spacesuit the astronauts wear. The current suits are designed to be used six times, then refurbished, and the gloves get replaced after five missions. The suits also have to be custom-tailored for each astronaut. The study contract will identify ways more life could be built into each suit, as well as ways one ready-made suit could be worn by any astronaut.

Another limitation is that the suits are pressurized at about four PSI (pressure/square inch). Prior to an EVA, the air pressure aboard a spacecraft is approximately 14 PSI. In order to tolerate a reduction to four PSI, prior to each EVA mission, cabin pressure must be dropped to 10 PSI for a day, and the astronaut has to do a 30-minute prebreathing exercise — inhaling pure oxygen. Otherwise, he or she would be stricken with the bends.

That would be unacceptable for frequent EVAs. "When you put it all together, today's astronaut is limited in what he or she can do," says Abeles. "The key is to make the person very productive, thus making the Space Station highly productive." Among the future applications for EVA he cites are the assembly of the Space Station itself, repairs and maintenance, cleaning Station solar panels, experiments on the station's various projectiles, and servicing satellites.

One innovation the study will address is the "hard" spacesuit. Current suits are made of fabric. Hard spacesuits have been proposed that would be made of metal — weight is no object in space — with ribbed joints resembling a "Slinky." They would offer the advantage of operation at approximately eight PSI, which would greatly reduce the risk of the bends and eliminate the need for prebreathing sessions.

> ***'With current equipment, EVA cannot be done with the duration and frequency that will be required by the Manned Space Station'***

"The first thing we'll do is set EVA mission requirements," explains Abeles. "We'll identify needs — How much EVA activity is needed? How long a duration for each mission? How often? How many astronauts could make an EVA at once? What will their mobility requirements be?

Assessing technology

"The next step is to assess technology — essentially, what is the state of the art in relation to EVA needs? What is technologically feasible? Finally, we will put forth design requirements for an EVA system. As an example, 'the astronaut shall be able to don the spacesuit in no less than, say, five minutes.' Fourth, we'll provide NASA with our straw-man specification."

In addition to putting together a straw-man specification for the EVA system itself, the study contract calls for developing one for interfacing systems inside the Station. For example, the study will address whether a backpack should be recharged inside or outside the station, and where spares would be stored.

After the study is complete, it is still unclear what path NASA will take for the actual design and production of EVA systems.

FICA takes bigger bite in '85

Surprise, surprise. The Social Security (FICA) deduction from your paycheck is higher this year. The Social Security tax for employees is 7.05 percent in 1985. Last year, employees paid 6.7 percent.

In addition, the "wage base" — the maximum amount of earnings on which Social Security taxes are paid rises from $37,800 to $39,600 this year.

People who earn $37,800 or less a year won't notice as big a change in their Social Security deductions as workers in higher income brackets, according to the Social Security Administration.

If your earnings are $15,000 a year, for example, you will pay $52.50 more into Social Security in 1985 than you did last year. If your earnings are $37,800, you will pay $132.30 more into Social Security this year. On earnings of $39,600 or more, the Social Security tax in 1985 will increase by $259.20. This larger increase reflects the higher taxable wage base for 1985.

Although workers in higher income brackets pay more in Social Security taxes, they also can count on higher benefits when they are eligible for Social Security. Their monthly checks will be higher because benefit amounts are based on the amount of earnings on which Social Security taxes.

Employers also will pay more into Social Security in 1985 since they match, dollar for dollar, the amounts paid by employees.

GHC receives $17M Sperry contract

Grumman Houston Corporation has been awarded a $17.1 million contract from Sperry Corporation for the production of 18 tactical shelter systems for the United States Air Force.

The tactical shelter systems (TSS) will be used in conjunction with the Air Force's Phase IV program. Phase IV is the code name assigned to an Air Force program to replace all USAF base support computers worldwide.

Under the award, GHC is a second-tier contractor. Sperry, the Air Force's prime contractor, won its $473 million contract for Phase IV systems several years ago. That contract spans two decades and calls for 153 Sperry 1100/60 computers to be installed worldwide.

Each shelter system will consist of four air transportable shelter modules. These combine to transport, house, and maintain an environment for the Sperry 1100/60, which is one of the largest computers made. Power for the computer and environmental control systems is provided by three 60-kw diesel generators.

The prime contract, awarded to Sperry in January 1983, calls for replacement of 287 older, obsolete computers with 153 Sperry 1100/60 large-scale systems, including more than 20,000 communications terminals. The new Sperry systems will support Air Force requirements for handling aircraft parts inventories and maintenance operations worldwide. In addition, the new Sperry computers will perform a diverse array of base personnel, financial, civil engineering, and administrative functions.

Up and ready. *Prototype shelter systems undergo 20-hour tests at GHC.*

Improved outlook

"The contract represents a very definite improvement in the business picture at Grumman Houston," says GHC President Bob Pearson. "It will account for more than half our business in 1985. The contract also opens up new marketing opportunities. Right now, we're pursuing a number of government programs for systems of this kind, for use with ground support, ATEs, and other systems."

Pearson adds that the Defense Department now places great emphasis on rapid deployment, and the components of Phase IV will meet that requirement. All equipment would be flown to a remote field site on a large transport plane, and would be installed and ready to operate within twelve hours.

Notes Bob Madey, Director of Business Development for GHC: "This program is significant in that it offers Grumman Houston the opportunity to provide the Air Force with a total package. That package started with systems design; continued through manufacturing and training of Air Force personnel; and finally, will include spares provisioning and field service support."

Additional orders expected

The $17 million order represents the initial order for two prototypes and 16 production tactical systems and extends through 1986. Orders for additional shelter systems are expected by GHC, depending on government budget approval.

While Phase IV will encompass 153 systems, the number of shelter systems required will be smaller because many of the installations will be in permanent structures, whether new or existing.

Of the 18 systems, two prototypes have already been built by GHC and delivered to the Air Force, where they will undergo further testing. Final customer acceptance is scheduled for mid-March at bases in England and Korea. The first production systems are scheduled for delivery this August.

GHC previously manfactured oil field shelter modules for Schlumberger, a large energy company. Among numerous other differences, the new systems will be about eight times larger than the Schlumberger shelters. The latter housed much smaller computer systems. During transport, all terminals, computer supplies, tools, etc. are lashed inside the shelters.

The modules will have similar construction. Each will be constructed of a steel frame with aluminum/polyurethane foam sandwich panels. Steel skids are welded to the frame. The modules are airtight, weatherproof, corrosion and fire resistant, shock resistant, secure, and stackable. They may be transported by air, truck, rail, or ship, and handled by crane. The entire system, including generators, weighs 73,000 pounds.

Staff levels at GHC will remain constant. The contract will enable GHC to compensate for a slackening of business in the energy industry, explains Pearson.

X-29 lauded as 'pioneering'

Congressional honor. *The Congressional Caucus for Science and Technology — through its technology arm, the Research Institute for Space, Science, and Technology — presented its award for 'Pioneering Work in Aerospace Technology and Engineering' to the 'Engineers of the Grumman Aerospace Corporation.' The award was in recognition of the several state-of-the-art technologies incorporated in the X-29A. Accepting the award for Grumman was Renso Caporali (R), Senior Vice President — Technical Operations.*

obituaries

WILLIAM J. FURMAN of Electric Harness Fabrication, Plant 44, died December 6 at the age of 63. He had been with the company since 1970 and resided at 26 Hileen Drive, Kings Park, N.Y.

ESTHER KARGAUER of Invoice Audit, Plant 30, died December 20 at the age of 54. She had been with the company since 1965 and resided at 10 Laurel La., Commack, N.Y.

FRANK P. HOWELL of Flight Operations, Plant 4, died December 26 at the age of 61. He had been with the company since 1945 and resided at 100 Atlantic Ave, Oceanside, N.Y.

RUSSELL C. MOSZKOW of Cadmium Plate, Plant 2, died December 28 at the age of 61. He had been with the company since 1950 and resided at 44 Bloomingdale Rd., Hicksville, N.Y.

JOHN V. MUNOZ of ILS Technical Writing, Plant 15, died December 30 at the age of 23. He had been with the company since 1984 and resided at 42 Holiday Park Dr., Centereach, N.Y.

Personals

The family of Roland Nadeau wishes to express its heartfelt appreciation to his co-workers for all of the kind words of sympathy, cards, flowers and mass cards given in his memory.

I am taking this opportunity to say thank you to my husband's co-workers, his contemporaries, the Grumman Amateur Radio Club and the management team that supported us so strongly during my recent bout with cancer. My sincere thanks to each and every one of you and to the entire Grumman family. **Mrs. Charles Steinbrenner**

My family and I want to thank the Grumman ESO for their kind expression of sympathy during the recent loss of my father, Joseph Bilanin. **Howard P. Bilanin**

New E-2C building keeps a tight lid o

From an architectural point of view, the new E-2C Systems Engineering and Software Facility (SESF) in Plant 14 is as intriguing as it is attractive.

The SESF building, which opened in August, is the center for E-2C avionic development and marketing for both U.S. and foreign versions of the Hawkeye. It now houses about 120 people from the E-2C world. At full occupancy, about 150 Grummanites will work there, according to Dan Crowley, E-2C Engineering building coordinator.

"Hawkeye Country," as the building is called, reflects the systems engineering tasks for which it was designed. The first floor encompasses customer requirements, design specification, hardware development, testing, and sell-off. The entire second floor is dedicated to the development of tactical and support software, and contains a development and evaluation lab for E-2C Engineering document processing. The third floor is functionally separate from the others and contains office and lab facilities for E-2C foreign customers.

The best place to be. *Susan Ehrbar (above left) inputs information in the Software Documentation Center. Cathy Booth, Charlie Fleming, and Artie Dubois (above right) review a printout in the E-2C Software Development Laboratory.*

Welcome to Hawkeye Country

The building's lobby, complete with a tile floor and potted plants, hardly strikes the casual observer as the entrance to a tightly controlled facility. But that it is. The word "futuristic" best describes the myriad security measures taken by the building's designers.

Part of the rationale for this comes from the extensive use of computers in the facility. There are 47 integrated computer systems on the first two floors, and three separate 13-computer networks on the third. So, before ground was broken, the SESF building plans had to meet Department of Defense specifications for computing facilities.

"The DOD has informed us that this is the largest DOD-authorized building of its kind in the world," declares Crowley.

Secret-level clearance only

No one can enter or leave the building without passing the guard in the lobby, and most of the building's interior consists of controlled areas. People who work there must all have a secret-level security clearance.

Dedicated entrances and containment areas permit visitors to access only authorized parts of the building. Visitors must be escorted while in these areas. "Wandering and browsing" is not possible. Since the containment area doors lock automatically on both sides, the escort must type a security code into a keypad on the door to unlock it to permit a visitor to enter or leave an area.

Just to illustrate how pervasive the concern for securing the E-2C building is, consider its utilities systems. Repair personnel for heating/ventilation/air conditioning (HVAC), electrical, and other systems never have to set foot inside the actual offices and laboratories, since these are all housed in a separate building. "Separate" is no exaggeration — there is over a foot of airspace between the two structures. And the repair person also has to pass through the guarded lobby

One containment area is the facility's guest area, consisting of a lounge and theater. The 40 x 30 foot theater can be divided into two equal size conference rooms for E-2C Engineering conferences, customer or media presentations, discussions, and design reviews. A closed circuit video system makes it possible to view the E-2C flight and lab activities in this theater. Two cameras, two VCRs, and four large-screen television receivers provide displays of E-2C avionic capability. This not only makes such briefings more meaningful — it also minimizes the amount of time that lab activities are disturbed by visitors.

Houses six mini-E-2C labs

The theater adjoins the E-2C integration lab, one of six "mini-E-2C's" in the building. Each of the labs contains a 3+1 bench — the actual hardware/software package, plus advanced system enhancements, that flies aboard the Hawkeye. When it is necessary for visitors to pass from the theater to the lab area, integration lab development activities cease. The lab is then isolated by motorized, soundproof, light-tight draperies. In this manner, the sensitive development work in the interconnected lab or office areas is unaffected during sell-offs or demos.

"All of this was impossible in our old location, which was in another part of Plant 14," says Crowley. He notes that a sell-off, required by a contract, can take weeks. Such lengthy meetings also take place during system upgrades. In the group's old quarters, both customers and Grummanites had to crowd together into one small room.

The first floor also contains a Systems Engineering office and several other lab areas. The office serves over 60 engineers and contains a terminal room for document processing and computing. Labs for E-2C technicians, radar, environmental processing, instrumentation, JTIDS, Passive Detection IFF, and communications are all interconnected, and are integrated with the VAX computers and word processors on the second floor. First floor labs also contain word processing terminals to access specifications and test procedures or edit a document during development.

In addition to the two staircases and elevators, the first floor labs are connected by a spiral staircase to the software engineering areas on the second floor. When assistance is needed during a presentation, system test, or other development effort, the appropriate experts from upstairs — or downstairs, for that matter — are paged and arrive in minutes.

Hooking up to "antenna farm"

Ground support equipment users, who bring equipment in for diagnostic checks, have their own first floor lab area. Equipment enters a garage-like area designed to service large vans. Doors to the area are locked and alarmed once the vans are inside. To operate, the equipment is plugged into wall receptacles, which connect it to the E-2C tactical systems and VAX computers inside the building, and to an antenna "farm" on the roof.

The second floor layout reflects the needs of software engineering. Two tactical Software Engineering offices, one for the U.S. Navy and one for foreign markets, are located at opposite ends of a mini-E-2C lab. The Document Processing Center and VAX computer room are between the tactical area and the support Software Engineering office and lab. Since all systems are fully integrated, a simulation software engineer at his terminal on the second floor can modify a program in a first floor lab without leaving his desk.

The third floor of the building is devoted to foreign military sales. Each of two work areas has a laboratory complete with a 3+1, technicians' area, classroom, office spaces, and a resident Grumman office. Included are areas for Singapore and Egypt, with space for a third "generic" area. The generic area will be used on a time-shared basis for foreign customer training and development of unique air/ground environment systems for foreign nations.

Most of the building is set up to be reconfigured at will. The floors are actually carpeted squares with wiring and other conduits underneath, and the building makes extensive use of modern, open-plan workstation furniture. As the E-2C changes, so will the building.

"This building totally reflects the needs of the E-2C people," says Crowley. "We documented and reviewed each group's functional requirements over and over until the building design reflected a complete E-2C requirement. Each group worked through me with the architect to

n secrets

Productive environment. *Marge Jund (above left) reviews a list of building personnel with Dan Crowley. In the first-floor E-2C Laboratories Office (above right), Jim Woodford, Ed Reiss, and Charlie Beisel perform a test.*

make sure that their needs were addressed exactly in the final plan."

There are other clever features about the building. For instance, the width of its hallways was dictated by the size of the computer hardware that would have to move through them. And in deference to cultural practices, the directional orientation of facilities in the foreign customers' office and lab areas was specified in the design.

The new building comes at a time when the E-2C program is working on five contracts: the two-part Update Development Program, JTIDS, and the Egyptian and Singaporean foreign military sales. Until now, the program never worked on more than two contracts at once.

"The lab building satisfies customer requirements 100 percent. And, of course, it has gotten rave reviews from the Grummanites who work here," Crowley says.

Building draws rave reviews

George Rapp, group leader in charge of Navy Tactical Software for the E-2C, is one fan. "The new building gives us the room we need," he says. "In the other area, the various groups had gotten too large for their work space. Systems analysts were moved out to the trailors behind Plant 31. Since my group deals with them on a daily basis, it made things difficult. . .Now, they're downstairs from us, making it much easier to call a meeting, for example." Another point: the phone system is superior to that of the old work area.

Rapp notes that the open-plan offices are much more conducive to concentration than the old-fashioned "bullpen" style offices. He especially gives high marks to the new lab areas, noting that engineers and other specialists no longer have to queue up to do research work.

"The new building is extremely conducive to productivity," declares Joan Colton, unit leader in the facility's Document Processing Center. "We can have close communication with the engineers, while at the same time enjoy the privacy of separate, sound-deadening cubicles." Previously, Colton's area was also in a large, bullpen-style area.

Despite the tight security, it's actually easier for workers to get around the new building than it was in their old quarters — once they are inside. That's because there's only one outside entrance.

"Since we were all in secure areas," notes Colton, "a lot of the groups were in separate offices with their own cypher locks on the doors. That meant we had to constantly punch in different combinations to reach the people we had to see. Now, once you punch in the main combination, you're can get to all the groups."

Senior Engineering Aide Linda Krooss is part of a two-person team that tests software packages and evaluates their applicability to E-2C documentation needs. As such, she helps ensure systems stay completely state-of-the-art. "Word processing is pretty sophisticated in this building," notes Krooss. For instance, all engineers can use WP software — and some do their own inputting. However, all documents generated are revised by the DPC to fit a specific format.

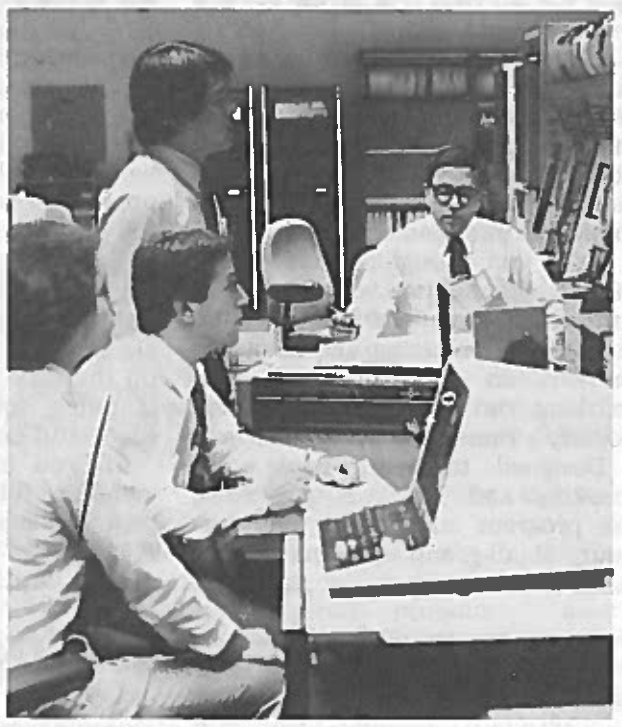
Since all systems are integrated, "if someone working on a scope wants to check some documentation, he or she can call that information up," says Krooss. "Likewise, if someone in the Document Processing Center must access analytical data, that person can call it up also."

The group is also digitizing, via optical character recognition (OCR) equipment, old, hard-copy E-2C texts in order to establish an all-computerized database.

Mary Schreiber, secretary to Dennis Carter, project engineer for E-2C software, is another one of those who give the building a "10." Schreiber especially likes the logical arrangement of work groups in the building, saying the proximity to people she works closely with makes her day a lot easier.

"It's absolutely wonderful. I used to work in an area that was entirely enclosed, so it's nice to be in an area that has plenty of light," she says. "And the people who work here are a fantastic group — very dedicated. They're a credit to Grumman."

The five concurrent E-2C contracts constitute the greatest E-2C Engineering challenge to date. The E-2C Systems Engineering and Software Facility is not only an example of planning for the future. It's an example of Grumman providing the right tools for today — all in three stories and 70,000 square feet of floor space.



High tech. *Matt Gardella and Vinnie Giangregoro (top) modify electronic equipment. (Middle) Adam Druhak, Jeff Schwartz, John White, John Finn, Cheryl Woo, Diane Gaidon, Fred Figler, Tom Mohaghan, Phyllis Foley, and Barbara Ditta meet in new conference area. (Bottom) Mark Johnston, Bob Shimbrot, Steve Hong, and Rafique Ahmed do a test on a 3+1 bench.*

New Great Decisions program explores important global issues

Approximately 45 Grummanites have been meeting after work in the past few months to discuss such foreign policy topics as the international debt, drug traffic, and world peace.

The people are part of Grumman's Great Decisions program, the first of its kind in corporate America. Three groups of 12 to 15 Grummanites have met one night a week, and they recently completed the yearend '84 series of topics. The groups have met in the Grumman headquarters building on Tuesdays, Wednesdays, and Thursdays, and were moderated by Ed Lobl of Personnel Liaison, Bill Aubin of the Development Center (DC), and Joe Milillo of Industrial Engineering.

Great Decisions meetings are held nationwide under the auspices of the Foreign Policy Association (FPA). Founded in 1918, the FPA is nonpartisan, has no government affiliation, and takes no stand on issues. Through Great Decisions programs, involving over 250,000 participants in community groups nationwide, it presents impartial background information and analysis.

The heart of the program is its annual briefing book, issued to and read by each participant. The book's eight chapters outline today's most crucial foreign policy issues in concise, interesting language.

"Our group has a core of about nine members who are extremely enthusiastic and come to all the meetings," says Aubin, who is technical staff assistant to the general manager at the DC in Plant 5. "And the discussions are very lively. There is no 'settling' of issues. Everything is laid on the table and discussed." Aubin says most of the members of his group are looking forward to participating in the 1985 program.

After a discussion, each participant records his or her opinion on a ballot. These are tabulated by the FPA and their results published in an annual report. This report is distributed to the White House, State Department, Defense Department, Congress, U.S. Embassies, and the media.

The Grumman program was begun after a pilot meeting on foreign policy last May. A *Plane News* article solicited participants, and the three discussion groups were formed in late October.

In Aubin's view, the program is off to a great start — and he's confident many more Grummanites will sign up to participate in '85. "I've sensed a great deal of interest from my co-workers," he says.

The '85 series will begin on February 19. Topics on the agenda for '85 are revolutionary Cuba, the Soviet leadership in transition, the Iran-Iraq war, budget deficit — trade and the dollar, the Phillipines, population growth, future of the Atlantic Alliance, and U.S. intelligence.

All Grummanites are invited to participate by filling out the adjacent coupon. However, since time is short, do it right away. Mail all coupons to Grumman International, mail stop A32-GHQ.

Great Decisions info

Please sign me up for the '85 Great Decisions program.

Name ..... Dept. .....

Mail stop..... Ext. .....

Mail to Grumman International, mail stop A32-GHQ.

Crucial topics. *Great Decisions takes no stand on foreign policy issues. Instead it helps people develop informed opinions. Above, the Wednesday night group discusses Saudi Arabia and Jordan.*

Get a fresh start in '85

Okay, you've been drawing up your 1985 new year's resolutions and that old favorite — quit smoking — tops the list. Of course, you'd tried to quit smoking on many occasions, but you've failed time and time again.

Have you thought about joining other Grummanites who also want to quit smoking in 1985? The company is still offering all Grumman smokers an opportunity to stop smoking via the American Cancer Society's FreshStart program.

Designed to help people stop smoking and stay off cigarettes, the program consists of four one-hour, small-group sessions over a two-week period.

The sessions take place on company property at the end of the workday. For every Grummanite who completes the four-session program, Grumman will donate $25 to the American Cancer Society.

FreshStart's key concept is planning ahead. This program does not contain any non-essential assignments. Rather, the focus is on the task at hand — making your stopping smoking a positive and successful experience.

If you are interested in participating, fill out the form on this page and mail it to: Quit smoking, A41-GHQ.

Quit smoking

I'd like to quit smoking. Sign me up for the FreshStart Program.

Name .....

Mail Stop .....Ext .....

Workshift.....Plant.....

Mail to: Quit Smoking, A41-GHQ

How to combat high tuition

Grummanites pursuing higher education should investigate the variety of tuition assistance programs offered by the company.

People who have two-year degrees in mechanical engineering or have completed the first two years of a four-year engineering curriculum are eligible for Grumman's Manufacturing/Technology scholarships. Students receive up to $4,500 per year towards a bachelors degree in manufacturing engineering technology, and there are now 11 scholarship winners attending schools throughout the U.S. Applications for 1985 scholarships are due March 15. For more details, contact Fred Neuscheler at Ext. (111) 58268.

Those seeking masters degrees must apply by March 1 for the 1985 Grumman Science and Engineering Masters Fellowships. To be eligible, one must be employed by Grumman at least two years by September 1, 1985, and have a bachelors degree in aeronautical, mechanical, electrical, civil, or industrial engineering; math; physics; materials sciences; or computer sciences. Contact Paul Sluiter at Ext. (111) 56173.

Any Grummanite who is attending college part-time or full time should investigate the Tuition Reimbursement Program. If you get an "A" in an approved, career-related course, Grumman reimburses 100 percent of the tuition cost. Call Lorraine Alfino at Ext. (111) 53385 for more information.

E^3 group aims for lightning protection

They say "lightning never strikes twice," but it only has to strike once to damage an aircraft packed with electronics. In recent years, Grumman Aerospace engineers have been studying the effects of lightning on flying aircraft and how to prevent damage or disturbances to its sophisticated avionics.

Grumman's Electromagnetic Environmental Effects (E^3) Group recently began preparations to enter "Phase II" of its subcontract work on a Boeing Military Aircraft Company contract, entitled Atmospheric Electricity Hazards Protection (AEHP).

The AEHP program is aimed at creating advanced means of protecting sophisticated avionics of current and future composite-constructed aircraft from lightning. The $11-million program is scheduled to run through 1987 with Grumman's share of the funding at approximately $500,000.

Boeing was awarded the AEHP program contract by the Air Force Aeronautical Systems, Flight Dynamics Laboratory. Additional support is being provided by several other interested parties including the Army, Navy, Defense Nuclear Agency, Federal Aviation Agency and NASA.

Balanced protection

What these agencies are hoping to find is a "balanced protection scheme" for future aircraft. Today's aluminum aircraft skins act to some degree as lightning rods, conducting electrical current from a lighting bolt away from the airplane's interior and thereby offering some protection to the sensitive equipment — such as flight computers — inside.

Most composite materials of which future aircraft will be made however, resist electrical current, causing heat buildup in the airplane's skin that results in conducting currents in the airplane's interior. Hence a direct strike of lightning, or even one near the airplane's skin could damage the aircraft structure and create damaging current inside.

Anthony Zimbalatti, Grumman's principal engineer for the E^3 group, points out that "with increasing sophistication of aircraft electrical/electronics components and greater use of composites, lightning strike and other electromagnetic hazards are a growing threat to future aircraft."

"For instance, in advanced aircraft such as the X-29," says Zimbalatti," it would only take an electrical disturbance of less than one second to cause a crash because of the sophistication and delicacy of the fly-by-wire technology." The prevention of such effects is a major objective of the E^3 group, which develops hardening protection programs for all aircraft, including the X-29.

Homework pays off

Grumman was tapped by Boeing to be a part of the AEHP program because of its substantial knowledge and previous experience in the field of environmental threat effects. "Quite simply, we've done our homework in this area and we've got the know-how," asserts Zimbalatti.

Indeed, the award of the AEHP subcontract is a result of Grumman's lightning technology expertise gained from several previous studies and programs relating to "hardening" aircraft against lightning threats.

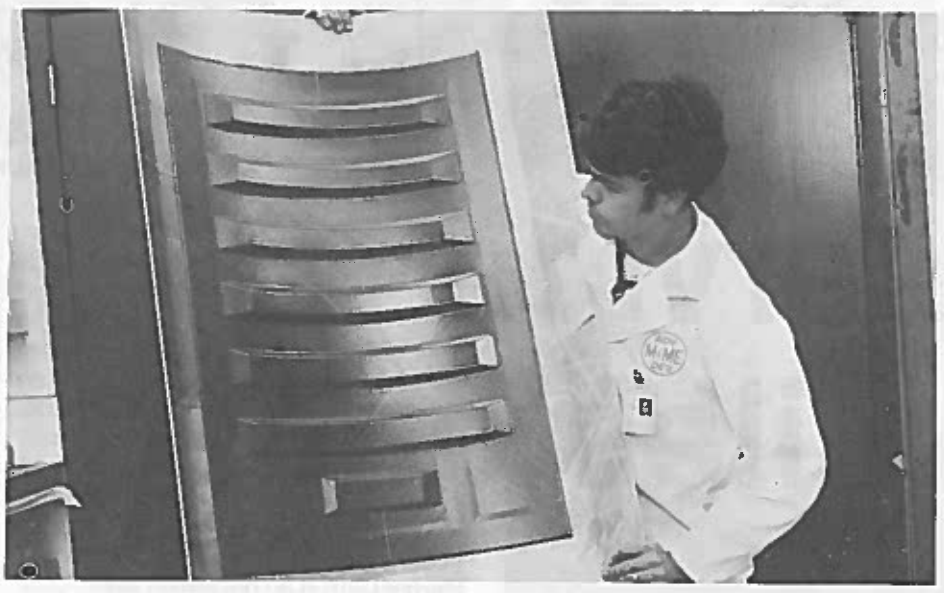
Such "hardening" or averting the effects of a lightning strike, can be accomplished in a number of ways including: shielding composite aircraft structures with flame-sprayed metallic coating or metallic cloths; placing strips of metal or metalized material on the aircraft skin surface (as is currently done on the F-14 boron horizontal stabilizer); adding lightning arrestors and transient suppressor filters to sensitive electrical wires and circuits; or even replacing signal wiring with fiber optics, which would carry data via light rather than electrical impulses.

Previous studies that the company made, such as the U.S. Navy Full Level Lightning Aircraft System Hardening (FLLASH) and the U.S. Air Force Protection Optimization of Aircraft Composites (POAC), provided the insight for protecting avionics and airframes from the effects of lightning for aircraft configured with significant composite and aluminum skins.

Using data base

As a subcontractor on the AEHP program, Grumman will manufacture several graphite composite structures. In addition, it will provide the engineering and design services and the personnel to support both the installation of structures and a lightning test program to be carried out at Boeing's Seattle, Washington facility.

"Our efforts in establishing lightning protection designs for graphite-epoxy and boron composite structures for programs such as the F-14A, and most recently for the X-29, have provided a data base that is applicable to the AEHP program as well as to other new aircraft using composites and high-tech fly-by-wire computer avionics," states Zimbalatti.



Lightning protection. *Phil King, a composite technician in the Plant 12 Advanced Materials and Manufacturing Development group, displays a graphite-epoxy aft "turtle deck" — one of three panels manufactured by Grumman for the Atmospheric Electricity Hazards Protection program.*

Grumman's contract with Boeing calls specifically for providing engineering and design services and graphite composite structures for protecting an aircraft against electrical transients induced by lightning. "We are supporting the design, modification and test of a test platform — an F-14 (Aircraft #13) on loan to the Air Force from the Navy. In addition, we will manufacture the graphite composite panels that will be mounted on the aircraft for the tests," notes Zimbalatti.

A team of test engineers from Calverton placed the F-14 in storage at Boeing's Seattle facility in early February last year. The crew has continued to maintain the aircraft in preparation for the start of testing this spring.

Three "turtle-back" graphite composite prototype panels have been manufactured by the Advanced Materials and Manufacturing department working in Plant 12 and the Product Development Operations Center (PDOC) in Plant 5. Two of the panels — aft and mid fuselage covers designed to protect hydraulic and electrical lines — have already been delivered to Seattle and are awaiting installation. A third panel for the forward section of the plane is nearing completion in the Plant 5 PDOC.

Each of the graphite-epoxy panels was manufactured using a special structural foam process created specifically for the program. The process, utilizing "Rohacell" structural foam, is said to be extremely cost effective and is expected to find application in many other composite parts manufacturing for the company.

Grummanites in Pt. Mugu, California are also involved in the program. They are modifying and installing composite overwing farings for the test aircraft.

The panels and the overwing farings will be installed on the aircraft by our support personnel in accordance with the design specifications that we generated in Phase I of this program," says Zimbalatti. "The testing itself will hopefully verify the models that we developed in that earlier phase."

The actual testing, or Phase II of the program, will involve subjecting the F-14 to approximately 200,000 amps and 3-megavolts of electricity to simulate a lightning strike. Previous tests used only 110,000 amps and 1-megavolt.

"We hope to develop and test a viable protection scheme for environmental threats, in this case lightning, which we can apply to all our aircraft programs," asserts Zimbalatti. "We expect to apply knowledge gained from this contract to develop Grumman design and test standards for hardening avionics and airframes for current and future aircraft programs such as the A-6 and F-14 updates, the X-29 and to the design development work for the next generation of advanced tactical aircraft. It's a learning opportunity which is invaluable to Grumman's efforts to remain a leader in the field of environmental effects protection technology."

M.E. Wood | S. Kikta | A.J. Fitter | R.A. Wallace | E.J. Finnick | J.H. Becker | O.G. Adams | M. Duff | W.E. Lehmann

service milestones

45

John H. Becker, Flt. Avionics (7)
Oswald G. Adams, Elect. Fab. (7)
Murray Duff, ILS Ops. Supt. (25)
Eugene J. Burke, Subsys. Rel. (25)
William E. Lehmann Jr., ILS Res. Cont. (110)

35

Carlo J. Ruggiero, Prod. Supv. (3)
Richard D. Mallett, Struct. Subs. (6)
Henry W. Patterson, Field Admin. & Lia. (272)

30

John J. Caputo, Prod. (1)
Ronald A. Mohr, Sub-Assy. Maj. (2)
Ronald J. Heitzmann, M & ME Mgt. (2)
Lloyd D. Schilling, M & ME Mgt. (2)
Harry Schroder, Proj. Mgmt. (2)
Richard J. Kita, Aerodyn. Des. (5)
Ellsworth L. Baker Jr., Corp. Cont. (5)
Robert W. Erickson, A6/EA-6B Sys. Instl. (6)
David S. Biggs, Struct. Des. (9)
Walter A. Hudson, Pres. Serv. (25)
James J. Seno, Mass. Prop. Anal. (25)
Richard B. Opsahl, Dept. Ops. Mgt. (35)
George C. Wiesinger, Corp. Qual. Mgt. (35)
John P. McAlonen, Inst/Anal. (39)
William F. Weber, Inst/Anal. (39)
Angelo F. Marzella, Struct. Des. (40)
George Hoyser, Plt. Prot. (43)
Edward J. Happ, Tech. Ops. (77)

25

Marie E. Wood, Prog. Mgmt. F-14A (1)
Stefan Kikta, Steel Parts Assy. (2)
Adolph J. Fitter, Instr. Test (6)
Robert A. Wallace, Elect. Bench Assy. (6)
Edward J. Finnick, Pres. Serv. (7)

20

Thomas A. Schaller, Sub-Assy. Maj. (1)
Francis N. Loiacono, Ctr-Sect. - Maj. & Subs. (1)
William Mishkin, ILS Mech. Equip. Eng. (1)
Harold Naparstek, Press (2)
Ferdinand T. Pacelli, Drop Hammer (2)
David C. Johnson, Sub-Assy. Maj. (2)
Elwood H. Gunther, Hyd. (2)
McKinley Banks, Prod. Plt. Mgt. (2)
Julius J. Rago, Prod. Plt. Mgt. (2)
Irving N. Peterson Jr., Prod. Plann. (2)
Frank T. Orobona, Mech. Insp. (2)
John W. Wimer, Conv. Mach. (3)
Julius E. Matera, Conv. Mach. (3)
Herman E. Garcia, Spotweld (3)
James F. Daniels, Trans. (3)
Gordon E. Honey, Mech. Struct. & Proto. (5)
Vito Lenoci, Crew Sys. Equip. Integ. (5)
Martin Golinsky, Human Factors (5)
Nicholas J. Furia, Softwre. Anal. (5)
Arthur R. Rifkin, Adv. Aircraft Sys. (5)
Dennis G. Romano, Marketing (5)
Arthur B. Donato Jr., Instr. Test (6)
Henry E. Stroh, Maint. (6)
Vincent M. Lattuca, Aircraft Prog. (6)
Wainwright M. Carlough, A6/EA-6B AFC (6)
Dominico Bruno, EF-111 Sys. Instl. (6)
Joseph A. Garappolo, EF-111 Sys. Inst. & Test (6)
John J. Toto, F-14 Comp. Instl. (6)
William J. Drinkwater, Ind. Eng. (6)
George E. Whitaker, ILS Elect. Pkg. (6)
Martin J. Lerner, Sys. Anal. (7)
Paul M. Dunca, Elect. Fab. (7)
Richard G. Magnan, Elect. Prd. Supp. (7)
Vladimir Zilavy, Pwr. Plt. Des. (9)
Carl Sardella, Cont. & Mech. (9)
Donald F. Schlegel, Boeing (9)
Serafino C. Carillo, Q.C. Lab. (10)
James G. Sweetland, Sys. Test (14)
Savino J. Ferrantino, Sys. Des. (14)
John Brunter, Elect. Des. & Dev. (14)
James E. Hart, Softwre. Appl. (14)
Robert E. Hoffman, PPO E-2 (25)
Robert L. Wirth, ILS Dig. TPS Eng. (25)
Joseph A. Calandra, Struct. Des. (25)
Lawrence J. Michelon, Prog. Mgt. E-2 (25)
Daniel G. Dennihy, Tech. Reqmts. (30)
Marie A. Meyers, Invoice Audit (30)
Joseph D'Amico, Des. Supt. Mgt. (31)
Frieda J. Petty, ILS Res. Cont. (35)
John J. Duzich, Fld. Pwr. (35)
Robert M. Sacks, Softwre. Sys. Mgt. (35)
William Reale, Qual. Eng. (35)
Geoffrey A. Sutfin, Inst./Anal. (39)
Joseph A. Gurney, PPM - Mil. & Space (40)
William Monsen, ILS Sub-Sys. Eng. (40)
Michael V. Byrnes, ILS Des. Eng. Mgt. (43)
Felix J. Mancuso, Prod. Supv. (43)
Daniel Mauro, GSE Scheduling (43)
Robert F. McBride, GSE Scheduling (43)
Mario V. DiMartini, Prog. Mgmt. (43)
Ronald K. Reynolds, Prog. Mgmt. (43)
Angelo Carnivale, Elect. Lia. Eng. (43)
Richard W. Bertoli, Finance (66)
Arthur B. Sorenson, F-14 Aft. Sect. Assy. (77)
David L. Adams, ILS Dig. TPS Eng. (106)
Frederick E. Albright, Elect. Mech. Des. (110)
Salvatore Professore, Maint. (111)
Robert P. Cordeiro, Grumman Allied

15

Paul F. Marino, Fld. Pwr/Pyrotechnics (1)
Urban J. Kues, Cad. Plate (3)
John W. Castle, Veh. Lia. Eng. (4)
Friedrich E. Meyer, Env. Ctrl. & Test (5)
Antanas Valys, Struct. Test (5)
Irene C. Krieg, Legal (5)
Kathleen B. Milhous, Opp. Dev. Staff (5)
Alexander D. Stefanovich, Struct. Subs. (6)
David T. Corazzini, Sys. Test A6/EA-6B (7)
George Brizz, Maint. (12)
Robert R. Branston Jr., PPO E-2 (25)
Frank V. Colangelo, ILS Mech. Equip. Engr. (25)
Mario M. Ranallo, Maint. (25)
Ralph C. Brown, Pwr. Plt. Des. (25)
Harris Davis, Nav. & Cont. Equip. Des. (25)
Kathleen L. Morris, Gen. Comm. (30)
Lois C. Nelson, Secty. Serv. (31)
Salvatore A. Gambitta, ILS Sys. Concepts (35)
Louise G. Garrett, Reqmts. Planning (43)
Edmund M. Bzdyk, Finance (66)
Leonard S. Adler, Inf. Res. Mgt. (105)
Albert A. Star, ILS Auto. Test Equip. (106)
Leslie J. Murrin, Simm. Dev. (107)

Carpools

Lindenhurst to Bethpage: 8 a.m. to 4:30 p.m. Call Herb Baker, Home - 957-8301; office - Ext. 52856/50693.

Farmingdale to Woodbury (Plant 45): handicapped employee needs a ride, hours are flexible. Call Betty Fallon, Ext. 59271.

More personals

The family of the late August L. Euring (Gus) would like to express our utmost thanks to the Grumman Family who helped comfort us in our time of sorrow. **The Euring Family**

On behalf of the Grumman Houston Family, we would like to extend our gratitude and appreciation for the support and sympathy we received from Plants 3 and 4, during the loss of our co-worker, Lonnie Dean Garland, while he was in New York on assignment.

My family and I wish to express our sincere thanks and appreciation to my friends, co-workers and ESO for their kind expressions of sympathy during the recent loss of my father. **Bill Spraul**

Retiree obituaries

Harold M. Baker of P.O. Box 402, Aptos, Calif., died September 19, 1984. He retired in 1971.

Rudolph Osterholm of 800 No Fork Rd., Stuart, Florida, died November 21, 1984. He retired in 1968.

Dee Graves of P.O. Box 61, League City, Texas, died November 23, 1984. She retired in 1984.

Harry Colli of 320 S. Jefferson St., New Pt. Richey, Florida, died November 28, 1984. He retired in 1969.

Joseph Becker Jr. of 33 Azul Country Club Village, Ft. Pierce, Florida, died November 29, 1984. He retired in 1978.

William Fairclough of 2034 E. Greenway Rd., Phoenix, Arizona, died November 30, 1984. He retired in 1975.

William R. Davis of 201 N. Manhattan Ave., Massapequa, N.Y., died December 3, 1984. He retired in 1981.

Thomas J. Spratt of 11 S. Bayles Ave., Pt. Washington, N.Y., died December 4, 1984. He retired in 1968.

Arthur P. Boklak of 1430 Richland Blvd., Bay Shore, N.Y., died December 4, 1984. He retired in 1983.

Frank A. Hetzel of Inlet Oaks Village, Box 123, Murrells Inlet, South Carolina, died December 6, 1984. He retired in 1977.

David S. Dillard of 3405 S. Lockwood Ridge Road, Sarasota, Florida, died December 8, 1984. He retired in 1977.

Charles F. Oerter of 406 Oakland Dr., Wilmington, North Carolina, died December 9, 1984. He retired in 1978.

Max Grefe of 44 Cherry St., Glen Head, N.Y., died December 13, 1984. He retired in 1976.

Emil U. Christensen of 2120 Spoleto La, Apt. B9, N. Charleston, South Carolina, died December 14, 1984. He retired in 1965.

scorecard

Vacation sign-ups

If you are already wondering how to spend your vacation time in 1985, then the Grumman Recreation Office is the place to visit. Recreation has sign-up sheets for several vacation packages in February and March, Trips range from the gourmet dining halls of the New York Culinary Institute to the fantasy world of Florida's Disney World and Epcot Center.

Reservations are being taken now for the Saturday, February 9, bus excursion to the Culinary Institute in Westchester, New York. The trip leaves at 9 a.m. from the overflow parking field on the west side of South Oyster Bay Road in Bethpage and returns that evening at 6 p.m. For a package price of $39 per person, the one-day trip includes bus transportation to the Culinary Institute, a tour of the Institute's famous winery, and a sumptuous gourmet luncheon.

Mardi Gras gala

If gourmet dining is not on your vacation diet this year, then perhaps a festive Mardi Gras trip is what you're looking for. The bus trip to New Orleans starts Thursday, February 14 at 7:00 a.m. and returns to Grumman on Sunday, February 24 at approximately 8:00 p.m.

The $469 per person (double occupancy) price tag includes: 10-nights accommodations; tours of Atlanta and New Orleans; a Mississippi Riverboat cruise; admission to Callaway Gardens and a visit to the National Air and Space Museum in Washington, D.C.

If you's like to head further south — 'South-of-the-Border', in fact, then Recreation's Mexico City, Acapulco and Taxco vacation is for you. For a double occupancy cost of $719 per person, you get round-trip transportation via scheduled airlines with transfers, three nights stay at the Hotel Geneve in Mexico City, five nights at the luxurious El Presidente in Acapulco and one night at the Hotel DeLaBorda in the 'city of silver' — Taxco. Tours of all these exotic cities are included as well as a tequila party and a gala dinner. The trip begins February 25 and runs a total of nine days to March 6.

For the young-at-heart of all ages, Recreation is offering a fantasy vacation to Florida's Disney World and Epcot Center. The trip departs on Monday, March 25, at 8 a.m. from Bethpage and returns Tuesday, April 2. Round-trip bus transportation, 8-nights accommodations, admission to Disney World/Epcot (2 days) and Sea World is included as well as 10 meals, sightseeing at St. Augustine and Baltimore Harbor, all for a double occupancy rate of $380 per person.

For further information on any of these or other vacation packages being offered by Grumman Recreation in 1985, contact Ellen Drasser at Ext. 52133.

Philately fun

The Grumman Stamp Club (GSC) will be offering a comprehensive collection of over 400 lots of classic United States stamps at two auction sessions in February and March. The first auction session will be held on Thursday, February 14 at 5 p.m. in the Plant 35 cafeteria. A second session will be scheduled for early March.

The GSC meets on the first three Wednesdays of each month (except July and August) in the Plant 35 cafeteria at 5 p.m. Club activities include the organization of community affairs, programs, new issue services, a reference library, the buying of collections for disposal to the membership, trading sessions, providing discount supplies, and holding stamp discussions — in addition to periodic auctions.

Currently the club is trying to set up a program of slide and film presentations and guest speakers to enhance interest in the hobby of philately and increase club membership. A $10 door prize against any auction purchase, is offered at each business meeting (first Wednesday of each month). Club dues are $3 per year. For further information, contact GSC president Steve Hoops on Ext. 53926.

Ringer. *Calverton's Bill Reushle rang in the new year as the 1984 singles horse shoe champion.*

B-ball varsity gets new blood

There is a whole new look to the Grumman varsity basketball team this year and the view is considerably elevated. The 1985 Tomcats opened their season with an infusion of new blood, both on the court and along the sidelines.

Ron Knight, the Tomcat's coach for the past several years, retired from the sidelines at the end of the 1984 season, and has stepped up to the position of general manager this year. He has been replaced by veteran player Jim McKinstry who is making the transition from player to coach seem almost too easy.

The Tomcats are currently undefeated in both the Long Island Industrial League and the very tough Glen Cove Open League.

Helping to make McKinstry's coaching debut a successful one are several new players added to the squad this season who bring with them something last year's team sorely lacked — height. New to the Tomcats are Paul Blinn, a 6'6" center/forward from Dowling College; Kent Miller, 6'4" from McDonnell Douglas; Del Harvey, 6'5" former Farmingdale College star; and Terry Mitchell, 6'5", both back after a year off.

In addition to the new skyscrapers, the squad also picked up Rich Picinish, described as a "hustler who is all over the court"; Howard Davis, a high leaper from Northeastern University; and Andy Kupec, a sharpshooter and excellent athlete just back from a tryout with the Boston Celtics.

McKinstry and assistant coach Rich Washington have done an excellent job of blending the new talent with returning veterans. Back from last year are Rick Cooke, Fred Turner, Mike Kennedy, Columbus Poole, Julius Longshore, Dave Follins and Nate Kelley.

General manager Knight is quick to note that the new blood has rejuvenated the team and sparked them to their best start in several years. "The new height we have on the squad has added a whole new dimension to our game. After finishing with a record of three wins and 11 losses in the Glen Cove Open League last year, we've opened this year with six straight wins there. The new guys are already making a significant impact and we're looking forward to a real big year in '85."

The Tomcats are hoping to avenge last year's loss to rival IBM in the L.I.I.L. championship finals after the team had posted an undefeated record in that league. "There's no denying that losing the championship after going undefeated hurt. But this year I think things will be different — and we've got the 'big guns' to make sure of it," asserts Knight.

The Tomcats play their L.I.I.L. games at Howitt Jr. High School in Farmingdale and they invite all their Grumman fans to turn out and support the team.

calendar

Aikido Club: (Martial Arts) every Wed., 5 p.m., Recreation Bldg. Black belt instructors, beginners class. Guests welcome. M. Brooks, 391-6157 or H. Brondo, Ext. 56472.

Alcoholics Anonymous: every Mon., 4:30 p.m., Plant 15 conference room C, closed meetings; Personnel Relations, Ext. 53521. Great River meetings: every Wed., 4-5 p.m., T. Conley, Ext. 53521. Calverton: Chemical Dependency Discussion Group, every Mon., 4-5 p.m., Flt. Test Center, new conference meeting room, open meeting, Personnel, 369-6759; C. Robb, Ext. 117-70038.

Amateur Radio Club: every 3rd Wed. of the month. Meeting held in the white shack on top of Plant 5 by the blue ball, 5 p.m., Bert Wengler, Ext. 50188.

Chess Club: every Fri., Recreation Bldg., 5 to 11 p.m. Beginner to expert, guests welcome. K. Marley, Ext. 54901/N. Corso, Ext. 59600.

Coin Club (Calverton): every Fri., lunchtime, Plant 6, A-6 Action Center conference room. Grumman employees welcome. N. Evangelides, Ext. 117-7242.

Computer Club: 1st Mon. of every month, Recreation Bldg., 7 p.m. Computer discussion and demonstration/beginner to advanced programming. Guests welcome. J. Hayne, Ext. 54945/H. Baluta, Ext. 50389.

Dance Club: every Wed., 5-8 p.m., Recreation Bldg. Guests welcome. S. Koppell, Ext. 115-3800.

Duplicate Bridge Club: every Thur., Recreation Bldg., 6 p.m. Guests welcome. Sid Stone, Ext. 59854.

Equestrian Club: every weeknight, Knoll Farm, Brentwood, 6 p.m. Grumman employees and immediate family only. P. Morrison, Ext. 57505.

Fencing Club: every Wed., 4:45 — 6:30 p.m., Recreation Bldg. Free instructions, guests welcome. J. Hayne, Ext. 54945/P. Chaldaris, Ext. 53486.

Folk Dancer's Club (Calverton): every Thurs., 2nd floor, Plant 6, lunchtime, Grumman employees only. J. Hamelman, Ext. 117-6835.

Grumman salutes 75 top managers

A group of some 75 department managers are spending at least part of their free-time being fitted for special "Grumman Blue" blazers which they won as part of being named the top Grumman managers of 1984 by Project Sterling.

The winners of the 1984 Manager Recognition Awards received the blazers and pewter Grumman logo button sets, as well as a presidential citation signed by Grumman Aerospace President George Skurla. The citation states that the awards are "in recognition of personal achievement and for outstanding contribution to the goals of Project Sterling."

The winning managers were nominated by their department heads for exceptional individual efforts during 1984. The winners are:

Michael Allegra, Pl. 35, Quality Engineering; Patrick Barry, Pl. 25, Program Management-Space; Paul Bavitz, Pl. 5, Advanced Program Engineering; William N. Birnbaum, Pl. 40, Program Manager A-6; Lowell Byars, Pl. 100, Flight Science Project Management; Peter Byrnes, Pl. 2, Tool Control; Michael Calderon, Pl. 6, Material Operations; Joseph Casey, Jr., Pl. 4, ILS Supply Operations Project Manager; Robert Coletti, Pl. 35, Vehicle Design Management; Patrick Conklin, Pl. 2, Production Manufacturing F-14 Management; Nicholas D'Avanzo, Pl. 43, Production Supervisor; Edward Davis, Pl. 7, Government Material Control; William Devine, Pl. 2, Manufacturing Systems.

Frank DiMicco, Pl. 30, Financial Control Program; Carnell O. Evans, Pl. 8, Production Management; Salvatore Failla, Pl. 47, ILS Training Systems Engineering; Irwin Fishberg, Pl. 1, ILS Systems Engineering Management; Albert E. Flad, Pl. 3, Machine Operations; Michael J. Galgano, Pl. 5, Field Operations Services; Thomas J. Gillen, Pl. 9, Aero-Structure Subcontractors; Neil Gilmartin, Pl. 1, System Development & Integration Project Management.

John Hassett, Pl. 1, Program Management F-14; Henry Hauser, Pl. 2, Project Management; Harold Hess, Pl. 25, Program Contracts; Walter A. Hudson, Pl. 25, Presentations Services; Peter Hurrle, Pl. 35, ILS Digital Engineering; Joelyn Iannone, Pl. 39, Career Education & Development; Henry Janiesh, Pl. 1, Program Management F-14; George Kerrigan, Pl. 2, Maintenance; John H. King, Pl. 2, Material Management; Stephen Kish, Pl. 1, Production Plant Management; William A. Kotzky, Pl. 6, Measurement Standards; Philip Lagan, Pl. 43, Material Management; Giancinto Lanfranco, Pl. 3, Production Plant Management.

Maris Lapins, Pl. 35, Stability & Control; Alfred Larsen, Pl. 17, Material Handling Systems; John O. Maier, Pl. 5, Planning Management; Felix Mancuso, Pl. 43, Manufacturing Supervision; Stephen Marciante, Pl. 6, Plant Protection; William McAllister, Pl. 5, Aero Test; Edward McNally, Pl. 3, Transportation Operations; Robert Milani, Pl. 2, Industrial Engineering; Paul C. Muzio, Pl. 105, Information Resources Management; Robert C. Nolan, Pl. 4, Production Plant Management; John O'Malley, Pl. 39, Training.

Kenneth O.Pasek, Pl. 30, Purchasing Management; Thomas Palmeri, Pl. 2, Production Pant Management; Ralph Braddock, Pl. 265, Assemblies; Roger Daniels, Pl. 264, Assemblies; Eugene Donovan, Pl. 66, Operations Management; Billie B. Gruwell, Pl. 77, Production Management Shop; Willard Harris, Pl. 52, Wing Inner Panel; Hans Kampmann, Pl. 45, Aircraft Programs; Richard F. Lauria, Pl. 77, Manufacturing Estimates; John Lueck, Pl. 77, Technical Operations; James F. Morgan, Jr., Pl. 77, Production Management Shop; John H. Otterstedt, Pl. 56, Machine Operations Management; John W. Pineo, Pl. 66, Manufacturing Planning; James Thomas, Pl. 265, Conventional Machines.

John Wilkins, Pl. 280, Technical Operations; Emil G. Pavlik, Pl. 15, ILS Publication Management; Susan Policastri, Pl. 30, Facilities Administration; Ronald Renick, Pl. 43, Resources; George Rose, Pl. 7, Airport Operations; Kevin Ryan, Pl. 25, Manufacturing Program Management; William G. Schultz, Pl. 5, Marketing; James Seidel, Pl. 5, Management; Harley Spinks, Pl. 7, Production Management; Lee Stacey, Pl. 92, Maintenance Administration; Frank Sticco, Jr., Pl. 18, Plant Protection; Joseph Traina, Pl. 5, Engineering Test Operations; Ric Trotta, Pl. 5, Advance Systems Management; Frank Tupper, Pl. 6, ILS Manager; Robert Wesolowski, Pl. 6, Engines; Edward Anderson; Pl. 25, Public Affairs/Motion Pictures.

Managing excellence. *More than 70 department managers received Project Sterling-Manager Recognition Awards in 1984 in "recognition of personal achievement and for their outstanding contribution to the goals of Project Sterling." In addition, the winning managers also received blue blazers with a set of pewter Grumman logo buttons.*

GRUMMAN
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